

What is claimed is:

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1. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other, each set of strut members being connected to adjacent sets of strut members by longitudinal connecting links and each set of strut members forming a closed, ring-like cylindrical portion of the stent, each set of strut members consisting of a multiplicity of connected curved sections and diagonal sections, each curved section having two ends and a center situated there between, at least one set of strut members having at least half of the curved sections within the set of strut members having a tapered shape wherein the width at the center of a curved section with a tapered shape is greater than the width at the ends of a curved section with tapered shape.
2. The stent of claim 1 wherein the curved sections of one or more of the sets of strut members have inside and outside surfaces in the shape of circular arcs each circular arc having a center of curvature with the centers of curvature of the two arcs being longitudinally displaced one from the other.
3. The stent of claim 1 wherein the width at the center of the curved sections with a tapered shape is at least 0.001 inches greater than the width at the ends of the curved section with tapered shape.

4. The stent of claim 1 further comprising a multiplicity of sets of flexible links with each set of flexible links connecting two of the multiplicity of sets of strut members, each set of flexible links consisting of a multiplicity of individual flexible links, each individual flexible link being a single undulating structure that extends generally in the longitudinal direction that is parallel to the stent's longitudinal axis and each individual flexible link having two ends, each one of the two ends being fixedly attached to one curved section of the multiplicity of sets of strut elements at an attachment point situated between the center and the end of that curved section.
5. The stent of claim 1 wherein one or more of the curved sections of the sets of strut members have a tapered shape with a greater width at the center of the curved section compared to the width at the center of at least one diagonal section.
6. The stent of claim 1 wherein all curved sections have a tapered shape.
7. The stent of claim 1 wherein the sets of strut members include end sets of strut members located at each end of the stent and central sets of strut members positioned between the end sets of strut members, the end sets of strut members having shorter diagonal sections as compared to the length of the diagonal sections of the central sets of strut members.
8. The stent of claim 7 wherein all curved sections of every central set of strut members have a tapered shape.

9. The stent of claim 7 wherein the strut width at the center of the curved sections of the end sets of strut members is less than the strut width at the center of the curved sections of the central sets of strut members.
10. The stent of claim 7 wherein the diagonal sections of the central sets of strut members have a center and two ends, at least one of the diagonal sections of the central sets of strut members has a tapered shape wherein the width of the at least one diagonal section is different at the center of the diagonal section as compared to the width at either end of that diagonal section.
11. The stent of claim 10 wherein the width of the at least one diagonal section is less at the center of that diagonal section as compared to the width at either end of that diagonal section.
12. The stent of claim 10 wherein the width of the at least one diagonal section is greater at the center of that diagonal section as compared to the width at either end of that diagonal section.
13. The stent of claim 10 wherein all the diagonal sections of all of the central sets of strut members have a tapered shape.
14. The stent of claim 10 wherein all of the diagonal sections of the end sets of strut members have a tapered shape.
15. The stent of claim 1 wherein the stent is coated with a plastic material.
16. The stent of claim 15 wherein the plastic material is parylene.

17. The stent of claim 16 wherein a drug is attached to the plastic material.
18. The stent of claim 17 wherein the drug is from the family of drugs that include Rapamycin.
19. The stent of claim 17 wherein the drug is Taxol.
20. The stent of claim 17 wherein the drug is heparin.
21. The stent of claim 17 wherein the drug is phosphorylcholine.
22. The stent of claim 15 wherein the plastic material has a highly radiopaque material mixed into the plastic material.
23. The stent of claim 22 wherein the radiopaque material is tungsten.
24. The stent of claim 22 wherein the thickness of the coating is greater at the ends of the stent as compared to the thickness of the coating at the longitudinal center of the stent.
25. A stent in the form of a thin-walled, multi-cellular, tubular structure having a longitudinal axis, the stent comprising a multiplicity of circumferential sets of strut members, each set of strut members being longitudinally separated each from the other, at least one set of strut members having a tapered shape wherein the width at the center of a strut portion with a tapered shape is greater than the width at the ends of a strut portion with a tapered shape.

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